

R E M A R K S

Favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Initially, Applicants wish to express their appreciation to the Examiner for his assistance provided to the Applicants' representative during the telephonic conference held on December 11, 2003.

The claims have been amended to clarify that the claimed composition is a pressure kneaded resin composition. In addition, the claims have been amended to recite that the composition "consists essentially of" the electroconductive agent and the radical-polymerizable thermosetting resin system. See page 24, line 11 to page 26, line 3 of the specification.

Claims 1-17 are rejected under 35 USC 102 as being anticipated by Butler. This ground of rejection is respectfully traversed as applied to the claims after the foregoing amendments.

The Butler composition requires "an effective amount of a rheological modifier to prevent phase separation between the resin component and the conductive filler component during molding". See claim 1.

However, Butler fails to disclose or suggest making a composition without a rheological modifier. The claimed composition does not require a rheological modifier. The claims have been amended to exclude a rheological modifier by the use of the phrase "consists essentially of". Addition of a rheological modifier to the claimed composition would effect the basic and novel properties of the claimed composition, as explained in detail below.

Butler further teaches that the "molding composition may be formulated and mixed using a variety of mixing conditions including either continuous or batch and using a variety of known mixing equipment". See column 6, lines 61-64.

However, Butler fails to disclose or suggest kneading the composition with a pressure kneader. The Examiner mentioned "It would be obvious to one of ordinary skill in the art that the invention was made to knead the resin composition with a pressure kneader as pressure kneading equipment is well known in the art and the reference teaches using a commonly known mixing equipment will provide proper mixing of the material". However, Butler fails to teach

the unexpectedly important role of kneading of the composition in relation to the phase separation of the composition components. Particularly, when the specific resin composition of the present invention is kneaded with the pressure kneader, no rheological modifier is needed to prevent phase separation. This discovery is unexpected from the prior art and results in improved composition properties.

Further, the resin composition is kneaded with the pressure kneader and thus an extreme heat energy is generated. Accordingly, since the resin composition of Butler contains the rheological modifier, the kneading of the composition with the pressure kneader increases the viscosity of the composition extremely, and thus the mixing of the composition becomes difficult. Thus, the flowability of the Butler mixture would be reduced and the moldability and properties of the molded article would deteriorate if kneaded with a pressure kneader.

Therefore, the subject matter of claims is submitted to be novel in the light of the references. Further, the combination of all elements of the subject matter of the present invention could never be expected from Butler.

The present invention provides unexpected advantages. That is, according to the present invention, since the composition is pressure kneaded without a rheological modifier, the molded article has high electroconductivity, high mechanical strength, low gas-perviousness, excellent durability, and high dimensional accuracy.

Since the resin composition of Butler is obtained with a conventional mixing equipment, the composition of Butler corresponds to the composition of Example 5 of the present description.

On the other hand, the composition of Example 6 corresponds to the present invention in which the composition of Example 5 is kneaded with a pressure kneader. As apparent from Table 2, Blending Strength, Thermal Conductivity, Shrinkage Rate, and Warp of the mold article of Example 5 are “6.1”, “31”, “0.04” and “3.2”, respectively. Namely, comparing Comparative Example 5 with Example 6, Blending Strength and Thermal Conductivity of Example 6 are improved about 7% and 16% respectively in comparison with those of Example 5, and Shrinkage Rate and Warp of Example 6 are reduced about 20% and 22% respectively in comparison with

those of Example 5. Further, since the composition of Butler contains the rheological modifier, the properties for a separator (such as resistance to a chemical compound, electroconductivity, mechanical strength) would also be deteriorated relative to the composition of the present invention excluding the rheological modifier.

Thus, these advantages of the present invention would never be predicted from Butler.

Accordingly, it is respectfully submitted that the amended claims are no longer anticipated by Butler.

Claims 18-19 were rejected under 35 USC 103 as being unpatentable by Butler.

However, in view of the foregoing comments and amendments, it is respectfully submitted that the rejected claims are not obvious from the teachings of the cited reference. Butler fails to disclose or suggest the claimed process for producing a separator using a pressure kneaded resin composition which excludes a rheological modifier.

In view of the foregoing, it is believed that each ground of rejection set forth in the Official Action have been overcome, and that the application is now in condition for allowance. Accordingly, such allowance is solicited.

Respectfully submitted,

Hiroya OKUMURA et al.

By:

Warren Cheek
Warren M. Cheek, Jr.
Registration No. 33,367
Attorney for Applicants

WMC/dlk
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
January 5, 2004